

IN THE CLAIMS

Please cancel claims 1-5.

6.(New) A plurality of instructions that control a SATPS receiver and verifies the validity of a SATPS three satellite solution, the plurality of instructions comprising:

- a first set of instructions that when executed for separates the three SATPS satellites into a first pair and a second pair;
- a second set of instructions that when executed constructs a primary solution and an alternate solution, wherein the primary solution and the alternate solution satisfy the measurement constraints;
- a third set of instructions that when executed computes a Doppler difference estimate for the primary solution and a Doppler difference estimate for the alternate solutions;
- a fourth set of instructions that when executed computes Doppler difference residuals for the first pair and the second pair of SATPS satellites; and
- a fifth set of instructions that when executed compares the Doppler difference residuals for said primary and alternate solutions to determine a valid solution.

7.(New) The plurality of instructions of claim 6, wherein the fourth set of instructions further comprises a six set of instructions that when executed determines a measured Doppler difference from an estimated Doppler difference for the first pair and the second pair of SATPS satellites.

12.(New) The method of claim 11, further comprising adapting the threshold power level to the navigation state.

13.(New) The method of claim 11, further comprising selecting between an average power test and a minimum power test.

14.(New) The method of claim 10, where the first measurement validity test further comprises selecting between at least an average power test and a minimum power test.

15.(New) The method of claim 10, where computing a Doppler difference estimate further comprises processing the Doppler difference estimate in a controller.

16.(New) The method of claim 15, where the controller is a digital signal processor.

17.(New). A SATPS receiver, comprising:

a receiver that is capable of receiving and demodulating at least three radio wave signals from respective SATPS satellites;

a controller that separates three of the at least three demodulated signals into a first pair and a second pair and calculates a primary solution along with an alternate solution from the first pair and the second pair, wherein the primary solution and the alternate solution satisfy measurement constraints; and

a Doppler difference estimator that estimates a Doppler difference for the primary solution and another Doppler difference estimate for the alternate solutions that are then used by the control to compute Doppler difference residuals for the first pair and the second pair of

8.(New) The plurality of instructions of claim 7, wherein a seventh set of instructions that when executed determines a valid solution by comparing the difference between the Doppler difference residuals to predetermined number.

9.(New) The plurality of instructions of claim 8, wherein an eighth set of instructions when executed determines when the Doppler difference residuals exceed the predetermined number and selects the alternate solution as the valid solution.

10.(New) A method of verifying the validity of a SATPS three satellite solution, comprising:

separating the three SATPS satellites into a first pair and a second pair;

constructing a primary solution and an alternate solution, wherein the primary solution and the alternate solution satisfy measurement constraints;

computing a Doppler difference estimate for the primary solution and a Doppler difference estimate for the alternate solutions and Doppler difference residuals for the first pair and the second pair of SATPS satellites;

comparing the Doppler difference residuals for said primary and alternate solutions to determine a valid solution; and

verifying the valid solution by selecting a first measurement validity test if a navigation state is known and a second measurement validity test if the navigation state is unknown.

11.(New) The method of claim 10, where the first measurement validity test further comprises comparing a carrier to noise density (C/N_0) with a threshold power level.

SATPS satellite signals where the Doppler difference residuals for the primary solution and the alternate solutions are used to determine a valid solution.

18.(New) The system of claim 17, where the Doppler difference residuals result from the difference of a measured Doppler from an estimated Doppler difference for the first pair and the second pair of SATPS satellites signals.

19.(New) The system of claim 18, where the Doppler difference residuals is determined in a microprocessor.

20.(New) The system of claim 17, where the controller is a microprocessor.

21.(New) The system of claim 17, where a valid solution comprises comparing the difference between the Doppler difference residuals to a predetermined number.

22.(New) The system of claim 21, wherein when the Doppler difference residuals exceed the predetermined number, the alternate solution is selected as the valid solution.

23.(New) The system of claim 17 further comprises a first measurement validity test selected by the controller if a navigation state is known otherwise a second state measurement validity test is selected.

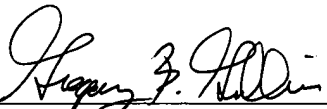
24.(New) The system of claim 23 where the first measurement validity test further comprises comparing a carrier to noise density (C/N_0) with a threshold power level.

25.(New) The system of claim 24, further comprising adapting the threshold power level to the navigation state.

Applicants respectfully ask that the Examiner enter the above preliminary amendment to the specification and claims.

Respectfully,

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